

GENERIC CATEGORICAL EXCLUSION FOR SITE CHARACTERIZATION AND TERRESTRIAL RESEARCH, PACIFIC NORTHWEST NATIONAL LABORATORY, RICHLAND, WASHINGTON

Proposed Action:

The U.S. Department of Energy (DOE) Pacific Northwest Site Office (PNSO) proposes to conduct site characterization, environmental monitoring activities, and terrestrial ecological and environmental research activities.

Location of Action:

The proposed action would occur on and near the Pacific Northwest National Laboratory (PNNL) campuses in Richland and Sequim, Washington, and at other locations within the United States.

Description of the Proposed Action:

The proposed action would include a variety of non-intrusive and intrusive characterization and monitoring activities conducted in support of purposes such as environmental surveillance, remediation, basic and applied terrestrial research, surveys, construction, and sampling.

Examples of non-intrusive activities include, but are not limited to:

- Geophysical techniques such as electro-magnetic surveys, site surveying and mapping, ground penetrating radar surveys, seismic monitoring, telemetry, and borehole spectral gamma logging.
- Radiological and chemical methods such as gamma scintillation, thermoluminescent dosimetry, soil gas surveys, x-ray fluorescence, radiological surveys, and sampling, transport, and analysis of environmental samples.
- Meteorological and physical data gathering techniques such as 1) monitoring air emissions, the climate, ambient air, river stages, transects, and flow measurements, 2) assessing potential wind-energy resources, and 3) sampling surface water.
- Cultural resource surveys such as facility inspections, field surveys, and inventory of cultural resources.
- Biological resource surveys such as field surveys and inventory of biological resources.

Examples of intrusive activities include, but are not limited to:

- Geophysical techniques such as installing groundwater and vadose zone wells, boreholes, and test pits and conducting groundwater tracer tests.
- Physical techniques such as installing piezometers, instrument clusters, lysimeters, and temporary support trailers.
- Meteorological techniques such as installing and operating weather stations, meteorological towers, and other instruments.
- Sampling and characterization of environmental media, contaminants, and waste streams.
- Ecological and environmental research such as environmental manipulation and associated sampling.

- Cultural resource techniques such as installing exploratory test pits and trenches, collecting and curating artifacts, and conducting core and auger tests.
- Biological resource techniques such as sampling plants and collecting wildlife, conducted under applicable state and federal collection permits.

All activities must meet environmentally protective requirements. The following mechanisms and restrictions would be implemented to verify compliance:

1. Any excavation would comply with PNNL excavation permit requirements, which outline requirements to avoid underground utilities, protect cultural and biological resources, and implement excavation safety requirements.
2. Wells, test pits, and boreholes would be installed in accordance with requirements in Washington Administration Code (WAC) 173-160, *Minimum Standards for Construction and Maintenance of Wells*.
3. If necessary, collection permits would be obtained prior to project initiation. Collecting biota would proceed in accordance with permits issued by local, state, and federal agencies. Examples of permits that might be necessary include Washington Department of Fish and Wildlife scientific collection permits and permits issued by the U.S. Fish and Wildlife Service (USFWS) to collect migratory birds.
4. Terrestrial research activities will take place in a small area (generally less than 5 acres) and will be designed in conformance with applicable requirements and use best management practices to limit the potential effects of any ground disturbance.

The proposed activities would include reasonably foreseeable actions necessary to implement the proposed action (e.g., safety support; material transport; project closeout; maintenance, development, and demonstration of processes, instruments, and detectors; consultation and planning with sponsors and collaborators; and maintenance, calibration, transport, and use of analytical and research equipment).

Biological and Cultural Resources:

Biological and cultural resources reviews will be conducted prior to activities with the potential to impact resources to assure that impacts to sensitive resources are avoided or minimized.

The biological resources review will identify the occurrence of federally and state-protected species and habitats in the project area such as avian species protected under the Migratory Bird Treaty Act (MBTA); species protected by the Marine Mammal Protection Act (MMPA); essential fish habitat as defined by the Magnuson-Stevens Fisheries Conservation and Management Act (MSA); plant and animal species and critical habitat protected under the Endangered Species Act (ESA), including candidates for such protection; and state species listed as threatened or endangered. Resource review recommendations will be followed during site characterization activities to assure there are no adverse impacts to sensitive species and resources.

DOE will conduct a cultural resources review as part of the Section 106 process of the National Historic Preservation Act (NHPA). The Section 106 process assesses undertakings to determine if the undertaking will have an adverse effect/impact to historic properties.

If the biological and/or the cultural resources review determines that resources may be adversely affected/impacted, the use of this categorical exclusion (CX) would be reevaluated. Potential options could be, but are not limited to, changing the proposed activity location, the development of mitigation measures to render the impacts not significant, or the performance of additional National Environmental Policy Act (NEPA) analysis and review.

Categorical Exclusion to Be Applied:

As the proposed action is to perform site characterization activities and terrestrial research activities, the following CXs, as listed in the DOE NEPA implementing procedures, 10 CFR 1021, would apply:

- B3.1* Site characterization and environmental monitoring (including, but not limited to, siting, construction, modification, operation, and dismantlement and removal or otherwise proper closure (such as of a well) of characterization and monitoring devices, and siting, construction, and associated operation of a small-scale laboratory building or renovation of a room in an existing building for sample analysis). Such activities would be designed in conformance with applicable requirements and use best management practices to limit the potential effects of any resultant ground disturbance. Covered activities include, but are not limited to, site characterization and environmental monitoring under CERCLA and RCRA. (This class of actions excludes activities in aquatic environments. See B3.16 of this appendix for such activities.) Specific activities include, but are not limited to:
- (a) Geological, geophysical (such as gravity, magnetic, electrical, seismic, and radar, and temperature gradient), geochemical, and engineering surveys and mapping, and the establishment of survey marks. Seismic techniques would not include large-scale reflection or refraction testing;
 - (b) Installation and operation of field instruments (such as stream-gauging stations or flow-measuring devices, telemetry systems, geochemical monitoring tools, and geophysical exploration tools);
 - (c) Drilling of wells for sampling or monitoring of groundwater or the vadose (unsaturated) zone, well logging, and installation of water-level recording devices in wells;
 - (d) Aquifer and underground reservoir response testing;
 - (e) Installation and operation of ambient air monitoring equipment;
 - (f) Sampling and characterization of water, soil, rock, or contaminants (such as drilling, using truck- or mobile-scale equipment and modification, use, and plugging of boreholes);
 - (g) Sampling and characterization of water effluents, air emissions, or solid waste streams;
 - (h) Installation and operation of meteorological towers and associated activities (such as assessment of potential wind energy resources);
 - (i) Sampling of flora and fauna; and
 - (g) Archeological, historic, and cultural resource identification in compliance with 36 CFR part 800 and 43 CFR part 7.

B3.8 Outdoor terrestrial ecological and environmental research in a small area (generally less than 5 acres), including, but not limited to, siting, construction, and operation of a small-scale laboratory building or renovation of a room in an existing building for associated analysis. Such activities would be designed in conformance with applicable requirements and use best management practices to limit the potential effects of any resultant ground disturbance.

Generic CXs are authorized by 10 CFR 1021.410(f) for recurring activities to be undertaken during a specified period of time, after considering potential aggregated impacts.

Eligibility Criteria:

The proposed activity meets the eligibility criteria of 10 CFR 1021.410(b) because the proposed action does not have any extraordinary circumstances that might affect the significance of the environmental effects, is not connected to other actions with potentially significant impacts [40 CFR 1508.25(a)(1)], is not related to other actions with individually insignificant but cumulatively significant impacts [40 CFR 1508.27(b)(7)], and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during environmental impact statement preparation.

The "Integral Elements" of 10 CFR 1021 are satisfied as discussed below:

INTEGRAL ELEMENTS, 10 CFR 1021, SUBPART D, Appendix B (1)-(5)	
<i>Would the Proposed Action:</i>	Evaluation
Threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health?	The proposed action would not threaten a violation of regulations or DOE or Executive Orders.
Require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities?	No waste management facilities would be constructed under this CX. Any generated waste would be managed in accordance with applicable regulations in existing facilities. Waste disposal pathways would be identified prior to generating waste and waste generation would be minimized.
Disturb hazardous substances, pollutants, or contaminants that preexist in the environment such that there would be uncontrolled or unpermitted releases?	No preexisting hazardous substances, pollutants, or contaminants would be disturbed in a manner that or results in uncontrolled or unpermitted releases.
Involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species?	The proposed action would not involve the use of genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species (unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements).

<p>Have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited, to:</p> <ul style="list-style-type: none"> • protected historic/archaeological resources • protected biological resources and habitat • jurisdictional wetlands, 100-year floodplains <p>Federal- or state-designated parks and wildlife refuges, wilderness areas, wild and scenic rivers, national monuments, marine sanctuaries, national natural landmarks, and scenic areas.</p>	<p>No environmentally sensitive resources would be adversely affected by the proposed characterization actions.</p> <p>The proposed action would not adversely affect floodplains, wetlands regulated under the Clean Water Act, national monuments, or other specially designated areas, prime agricultural lands, or special sources of water.</p> <p>Potential impacts to Biological or Cultural resources would be addressed as described above.</p>
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Summary of Environmental Impacts:

The following table summarizes environmental impacts considered when preparing this CX determination.

Environmental Impacts Considered when Preparing this CX	
<i>Would the Proposed Action:</i>	Evaluation
<p>Result in more than minimal air impacts?</p>	<p>There might be temporary and localized air emissions as well as dust and fumes from equipment associated with site characterization and terrestrial research activities. Any air emissions generated would be minimized as necessary by using water applications or other emission controls. Air emissions would be compliant with applicable permits, local, state, and federal regulations, DOE orders, and PNNL guidelines.</p>
<p>Increase offsite radiation dose measurably?</p>	<p>Some site characterization and terrestrial research activities could use sealed sources for environmental measurements. These will be handled and operated following PNNL procedures and will not increase offsite dose.</p>
<p>Require a radiological work permit?</p>	<p>Although not expected, it is possible that some environmental sampling and monitoring might occur within Radiological Control Areas. Activities would be performed in compliance with as low as reasonably achievable (ALARA) principles, applicable state and federal regulations, DOE Orders, and PNNL guidelines. The radiation received by workers during the performance of activities would be administratively controlled below DOE limits as defined in 10 CFR 835.202(a). Under normal circumstances, those limits control individual radiation exposure to below an annual effective dose equivalent of 5 rem.</p>

<p>Discharge any liquids to the environment?</p>	<p>Site characterization activities such as well development, maintenance, and sampling might require purging of groundwater. Depending upon the location of the well, purge water would be discharged to the ground or contained for treatment in accordance with applicable environmental requirements. During site characterization and terrestrial research activities there might be minor quantities of liquid effluents, for example, sampling cleanup rinse water. Effluents would be managed in accordance with applicable regulations and best management practices.</p>
<p>Require a Spill Prevention, Control, and Countermeasures plan?</p>	<p>Site characterization and terrestrial research activities are not likely to require a Spill Prevention, Control, and Countermeasures plan.</p>
<p>Use carcinogens, hazardous, or toxic chemicals/materials?</p>	<p>Proposed activities might involve use of carcinogens, hazardous and/or toxic chemicals and materials. For example, certain research or excavation equipment might contain or require the use of chemicals such as antifreeze, hydraulic fluids, or fuel. In addition, outdoor research activities might require the use of cleaning solvents and other potentially toxic substances. Project inventories would be maintained at the lowest practicable levels, and chemical wastes would be recycled, neutralized, or regenerated if possible. Product substitution (use of less toxic chemicals in place of more toxic chemicals) would be considered where reasonable. In addition, modifications of existing laboratory rooms could generate minor amounts of debris and excess equipment. These materials would be recycled, reused, or excessed for other uses to the extent practical.</p>
<p>Involve hazardous, radioactive, polychlorinated biphenyl, or asbestos waste?</p>	<p>Intrusive activities might generate hazardous or possibly radioactive waste (should sampling be conducted in a contaminated area). If unrecyclable, such wastes would either be returned to the client or characterized, handled, packaged, transported, treated, stored, and/or disposed of in treatment, storage, and disposal facilities in accordance with applicable regulations.</p>
<p>Cause more than a minor or temporary increase in noise level?</p>	<p>Some characterization or research activities such as well drilling may cause temporary increases in ambient noise levels. These impacts would be minor and short-term.</p>
<p>Create light / glare, or other aesthetic impacts?</p>	<p>Some characterization or research activities could require the use of temporary lighting. These impacts would be minor and short-term.</p>
<p>Require an excavation permit (e.g., for test pits, wells, utility installation)?</p>	<p>Intrusive activities might require an excavation permit, such as a PNNL or Hanford Site excavation permit. Stipulations in the excavation permit to minimize potential impacts to safety and the environment would be followed.</p>

Disturb an undeveloped area?	Although unlikely, it is possible that a temporary building, pad, or trailer might be erected in support of site monitoring or terrestrial research. A temporary building, pad, or trailer might be sited on land that is not previously disturbed. Additional NEPA would be required if disturbances would significantly impact sensitive species and/or habitats; cultural resources, including historic buildings and Traditional Cultural Properties; or other resources.
Result in more than minimal impacts on transportation or public services?	Site characterization and terrestrial research activities are not expected to cause more than minimal impacts to transportation or public services.
Disproportionately impact low-income or minority populations?	Site characterization and terrestrial research activities are not expected to disproportionately impact low-income or minority populations.
Require environmental or other permits from federal, state, or local agencies?	Although not expected during most activities, permits and notifications might be required for some of the site characterization and terrestrial research activities conducted under this CX (e.g., notifications for portable air-pollution sources, erosion and sediment control plans, wastewater discharge notifications, well registration, Clean Water Act permitting). Activities will abide by all applicable permit requirements.

Compliance Action:

I have determined that the proposed action satisfies the DOE NEPA eligibility criteria and integral elements, does not pose extraordinary circumstances, and meets the requirements for the CX referenced above. Therefore, using the authority delegated to me, I have determined that the proposed action may be categorically excluded from further NEPA review and documentation. This determination must be reviewed at least once every 5 years.

Signature: _____
Tom McDermott
PNSO NEPA Compliance Officer

cc: ES Norris, PNNL